

INDEX

	PAGE		PAGE
Acid insoluble matter in loess soils....	422-423	physiology of the Actinomyces.....	130-132
Acid Soils, Some Factors that Influence		salient features of the Actinomyces,	
Nitrate Formation in (paper), E. B.		tabular statement of.....	127-128
Fred and E. J. Graul. See Nitrate		soils used	103
formation in acid soils	317-338	Activity of protozoa in the soil.....	135-139
Acidity—		Albumen agar	104, 154, 155, 156, 157, 158, 159, 366
accumulation of due to sulfonation. 537-539		Alcohol (ethyl) used in soil steriliza-	
increase of due to grinding.....	96-98	tion	267, 273
of the medium as affecting enzyme ac-		Allison, F. E.—Brown, P. E., and (pa-	
tivities of bacteria.....	192	per), The Influence of some Common	
Actinomyces—		Humus-Forming Materials of Narrow	
<i>alboatrus</i>	117, 127, 129	and of Wide Nitrogen-Carbon Ratio	
<i>alboflavus</i>	120, 128, 129, 131	on Bacterial Activities. See Nitrogen-	
<i>albosporeus</i>	121, 128, 129, 131	carbon ratio	49-75
<i>albus</i>	102, 117, 127, 129, 131	Alumina—	
<i>aureus</i>	124, 128, 129	in loess soils	416-418
<i>Bobili</i>	121-122, 128, 129	iron, and, in the study of the effects	
<i>Californicus</i>	122, 128, 130	of climate on soils	34-35
<i>chromogenus</i> group	102, 109, 114-115, 121, 127, 131, 132	Alway, F. J., and Blish, M. J. (paper),	
<i>citreus</i>	108, 118, 127, 129, 131	The Loess Soils of the Nebraska Por-	
<i>diastaticus</i>	116, 127, 129	tion of the Transition Region: II.	
<i>diastato-chromogenus</i>	113, 127, 129	Humus, Humus-Nitrogen and Color.	
<i>erithro-chromogenus</i>	112, 127, 130, 131	See Loess soils of the Nebraska por-	
<i>exfoliatus</i>	116, 127, 130	tion of the transition region: II....	239-258
<i>flavus</i>	118-119, 127, 130, 131	Alway, F. J., and Isham, R. M. (paper),	
<i>Fradii</i>	125, 128, 129	The Loess Soils of the Nebraska Por-	
<i>griseus</i>	119-120, 128, 129, 131	tion of the Transition Region. III.	
<i>Halstedii</i>	124-125, 128, 129	Potash, Soda and Phosphoric acid.	
<i>lavendulae</i>	126, 128, 130	See Loess soils of the Nebraska por-	
<i>Lipmanii</i>	123, 128, 129, 131	tion of the transition region: III....	299-316
<i>porvus</i>	119, 128, 130	Alway, F. J., and McDole, G. R. (pa-	
<i>purpeo-chromogenus</i>	126, 128, 130	per), The Loess Soils of the Nebraska	
<i>purpurogenus</i>	126, 128, 130	Portion of the Transition Region: I.	
<i>reticuli</i>	118, 127, 129	Hygroscopicity, Nitrogen and Organic	
<i>rosceus</i>	125-126, 128, 129	Carbon. See Loess soils of the Ne-	
<i>Rutgersensis</i>	123-124, 128, 129	braska portion of the transition re-	
<i>Verne</i>	120-121, 128, 129	gion: I.	197-238
<i>violaceus-Caeseri</i>	111, 127, 129, 131	Alway, F. J., and Rost, C. O. (paper),	
<i>violaceus-niger</i>	111-112, 127, 129	The Loess Soils of the Nebraska Por-	
<i>violaceus-ruber</i>	110, 127, 130, 131	tion of the Transition Region: IV.	
<i>virido-chromogenus</i>	114, 127, 129	Mechanical Composition and Inorganic	
Actinomyces of the Soil, The (paper),		Constituents. See Loess soils of the	
S. A. Waksman and R. E. Curtis... 99-134		Nebraska portion of the transition	
ammonia accumulation by Actinomy-		region: IV	405-436
ces in the soil	131-132	Ames, J. W., and Schollenberger, C. J.	
classification of the Actinomyces....	109-110	(paper), Accumulation of Salts in	
description of the Actinomyces....	110-126	Ohio Soils	575-578
key to the identification of the Actino-		Amide nitrogen in soils and dried blood,	
myces	129-130	512, 515, 520-521, 524-526	
literature cited	133-134	Amide (acid) as acted upon by micro-	
media used	103-104	organisms	524-526
morphology of the Actinomyces....	130-132	Amino acids, as acted upon by micro-	
numbers of Actinomyces in the soil,		organisms	518
as related to bacterial numbers... 105-107			

	PAGE		PAGE
Amino (mono) acid nitrogen in soils		Bacteria—	
and dried blood	512, 515, 520-522	action of cellulose-dissolving bacteria	
Ammonia—		on the cellulose of plant tissues... 439-440	
accumulation—		and actinomycetes, numbers in the soil 105-107	
as an index of bacterial and proto-		cellulose-dissolving, characteristics, oc-	
zoan activity in the soil	143-149	currence and activities	440-444
by Actinomycetes in the soil	131-132	Diastase Activity and Invertase Activ-	
evolved from soils	90-91	ity of (paper), G. P. Koch. See	
formation in the soil as an index of		Diastase activity	179-196
chemical changes in the protein		in Soils, Quantitative Media for the	
molecule	516	Estimation of (paper), R. C. Cook.	
nitrogen determination of, in the soil.	83	See Media (quantitative)	153-161
production, as a result of hydrolysis		occurrence of nitrifying bacteria in	
of proteins	517-519	acid and non-acid soils	318-324
Ammonification—		protein decomposition by, in its possi-	
and nitrification in non-acid and acid		ble relation to enzyme activity.... 183-193	
soils	324-328	Bacterial—	
as affected by calcium carbonate.... 328-333		Activities, The Influence of some	
by Certain Soil Fungi, The Effect of		common Humus-Forming Materials	
Soil Reaction on (paper), N. Kope-		of Narrow and of Wide Nitrogen-	
loff. See Reaction, the effect of		Carbon Ratio on (paper), P. E.	
soil	541-573	Brown and F. E. Allison. See Ni-	
by fungi, as affected by the biological		trogen-carbon ratio	49-75
stage of the organisms	279-283	counts, in the study of the effects of	
experiments, in the study of the nitro-		climate on soils	11-13
gen-carbon ratio	54-62	numbers—	
studies, in the study of the effects of		and nitrate reduction affected by	
climate on soils	13-15	the addition of calcium carbon-	
Ammonium sulfate, as used in nitrifica-		ate	332-333
tion	18, 19, 21, 63-64	as affected by the—	
Antiseptics—		presence of protozoa	141-150
relative sterilizing efficiency of vari-		use of antiseptics	268-273
ous chemical substances	264-267	in Soils, at Different Depths and in	
volatile, the relative efficiency of—		Different Seasons of the Year	
applied as vapor in partial vacuum 267-270		(paper), S. A. Waksman	363-380
applied under heat and pressure.. 271-273		carbon content of the soils	369
Arginine nitrogen in soils and dried		climatic conditions for the year... 369	
blood	512, 515, 520-521, 523	historical	363-366
Arid soils—		lime requirement of the soils.... 369	
a Preliminary Statement as to the		literature cited	379-380
Status of the Humus Nitrogen		media used	366
Problem in (paper), C. B. Lipman. 285-290		methods employed	366-367
compared with loess soils in Nebraska,		moisture content of the soils	370-375
234, 256, 313-314, 433		nitrogen content of the soils.... 369	
Asparagine agar of Brown	154, 156, 157	numbers of bacteria	370-377
Azofication experiments, in the study of		soils used	367-368
the nitrogen-carbon ratio	65-70	summary	378
Bacillus—		Bacterium—	
albidus	445-446	castigatum	458-468
almus	446-448	idoneum	460-461
cereus, enzyme activities of	187	lucrosus	461-463
cholera suis, enzyme activities of.... 187		mycoides—	
coli, enzyme activities of	187, 188-193	ammonification by, as affected by	
concitatus	448-449	the presence of protozoa.... 148-149	
deciduus	450-451	enzyme activities of	182-194
festinus	451-453	paludosus	463-465
fluorescens liquefaciens	187	Bacto-natural, used for the inoculation	
gilvus	453-455	of soybeans	579-583
immitus	455-456	Baird, soybean, yield of dry matter and	
ingis	456-458	nitrogen content	175-178
megaterium, enzyme activities of.... 187		Baryta in loess soils	420-421
proteus vulgaris, enzyme activities of... 187		Biological stage of fungi, as affecting	
subtilis, enzyme activities of.... 182-187		ammonification	279-283
vulgaris, enzyme activities of.... 187		Black eyebrow, soybean, yield of dry	
vulgatus, enzyme activities of.... 187		matter and nitrogen content.... 175-178	

PAGE	PAGE
Blair, A. W.—	nitrate nitrogen 84
Lipman, J. G., and (paper)—	nitrogen, total 83
Factors Influencing the Protein	summary and conclusions 92-93
Content of Soybeans. See Soy-	treatment of soils 82-83
beans, factors influencing 171-178	bisulfid used in soil sterilization.... 267-273
The Yield and Nitrogen Content of	dioxide—
Soybeans as Affected by Inocu-	evolved from organic decomposition,
lation 579-584	composition of 89-90
and McLean, H. C. (paper), The In-	given off per day in soil variously
fluence of Lime on the Yield and	treated 86-88
Nitrogen Content of Corn. See	in loess soils 414
Lime, the influence on the yield.. 489-504	nitrogen ratio in loess soils of Ne-
Blish, M. J.—Alway, F. J., and (paper),	braska 229-231
The Loess Soils of the Nebraska Port-	organic—
ion of the Transition Region: II.	humus ratio in loess soils of Ne-
Humus, Humus-Nitrogen and Color.	braska 249-252
See Loess soils of the Nebraska por-	in loess soils of Nebraska 226-228
tion of the transition region: II.... 239-258	method of determination 226
Blocks, soil, for the study of effects of	tetrachloride used in soil sterilization,
climate 5-6	272, 273
Blood, dried—	Carbonate content of soils 88
composition of its proteins 511-512	Carbonates, determination of in the soil. 84-90
method of hydrolysis 512-513	Casein—
used in nitrification 18, 20, 21	agar of, Brown 154, 156, 157
Bloodmeal agar 154, 155, 156, 157, 159	used for the study of ammonification
Bodo—	and nitrification 320-330
<i>augustus</i> , isolated from the soil..... 141	used in ammonification experiments.. 54-57
<i>ovatus</i> , isolated from the soil..... 141	Cellulose—
Brown, P. E., and—	destruction, studies on, in the effects
Allison, F. E. (paper), The Influence	of climate on soils 28-30
of Some Common Humus-Forming	dissolving bacteria—
Materials of Narrow and of Wide	action on the cellulose of plant tis-
Nitrogen-Carbon Ratio on Bacterial	sues 439-440
Activities. See Nitrogen-carbon	occurrence and activity in southern
ratio 49-75	California soils 440-444
Johnson, H. W. (paper), Studies in	from plants, method of preparation.. 439-440
Sulfification. See Sulfification,	in Soils, Studies on the Decomposi-
studies in 339-362	tion of (paper), I. G. McBeth.. 437-437
Brown's—	<i>Bacillus</i> —
albumen agar 154, 155, 156, 157, 366	<i>albidus</i> 445-446
asparagine agar 154, 155, 156, 157	<i>almus</i> 446-448
casein agar 154, 156, 157	<i>concitatus</i> 448-449
urea agar 154, 156, 157	<i>deciduus</i> 450-451
Calcium carbonate, effect upon—	<i>festinus</i> 451-453
ammonification and nitrification,	<i>gilvus</i> 453-455
322-324, 328-333	<i>imminutus</i> 455-456
ammonification by soil fungi 556-571	<i>iugis</i> 456-458
bacterial numbers and nitrate reduc-	bacteria, cellulose-dissolving—
tion 332-333	action on the cellulose of plant
sulfification 358-359, 361	tissues 439-440
Carbohydrate decomposition by bacteria	characteristics, occurrence and ac-
in its possible relation to enzyme ac-	tivity 440-444
tivity 188-193	<i>Bacterium</i> —
Carbon—	<i>castigatum</i> 458-460
and Nitrogen Changes in the Soil	<i>idoneum</i> 460-461
Variously Treated: Soil Treatment	<i>lucrosus</i> 461-463
with Lime, Ammonium Sulfate	<i>paludosum</i> 463-465
and Sodium Nitrate (paper), R.	importance of cellulose destruction
S. Potter and R. S. Snyder..... 76-94	in soils 470-472, 477-479
ammonia nitrogen 83	introduction 437
apparatus, arrangement of 80-82	key for identification 473-476
carbonates 84-90	literature cited 481-487
historical 76-80	media 437-439
literature cited 93-94	plant cellulose, method of prepara-
methods of analysis 83-92	tion 439-440

	PAGE		PAGE
<i>Pseudomonas</i> —		Colloidal—	
<i>arguta</i>	465-467	content and volume of soils, in the	
<i>mira</i>	468-470	study of effects of climate on	
<i>minuscula</i>	467-468	soils	10-11
summary, general	479-481	solution—	
summary of specific characters ...	470-472	affected by—	
medium, method of preparation	438-439	muck colloidal solution	593
Chemical investigations, in the study of		presence of solid material.....	593-595
the effect of climate on soils.....	30-44	effect of its concentration on the	
Chernozem—		time required for coagulation...	595-596
soils compared with loess soils in Ne-		efficiency of electrolytes in flocculat-	
braska .. 231-234, 255, 313-314, 423, 432		ing it	588-590
types and conditions of formation in		minimum electrolyte requirement for	
Russia	200-202	its flocculation	590-593
<i>Chilodon</i> , isolated from the soil.....	141	Colloids, Studies on Soil: I. Floccula-	
<i>Chlamydomonas</i> , isolated from the soil..	141	tion of Soil Colloidal Solutions (pa-	
Chloroform, used in soil sterilization,		per), M. I. Wolkoff	585-601
267, 272, 273		concentration of colloidal solution, ef-	
Ciliates, numbers in the soil	140	fect on time required for coagula-	
Classification of the Actinomyces.....	109-110	tion	595-596
Claud, soybean, yield of dry matter and		electrolyte, minimum requirement for	
nitrogen content	175-178	the flocculation of a given amount	
Climate, A Detailed Study of Effects of,		of soil colloidal solution	590-593
on Important Properties of Soils (pa-		electrolytes, efficiency of in flocculat-	
per), C. B. Lipman and D. D. Way-		ing soil colloidal solutions	588-590
nick	5-48	introduction	585-587
alumina and iron	34-35	literature cited	599-601
ammonification studies	13-15	Mass Action Law applied to concen-	
blocks of soil used for the investi-		tration of colloidal solutions by	
gation	5-6	electrolytes	595-598
chemical investigations	30-44	methods	588
cellulose destruction, studies on...	28-30	muck colloidal solution, effect on the	
coefficient, hygroscopic	8	stability of clay colloidal solutions..	593
colloidal content and volume of soils	10-11	solid material present, effect on the	
color of soils	10	stability of colloidal solutions.....	593-595
general theoretical and other consid-		summary	597
erations	44-46	Color of the loess soils of Nebraska..	253-255
humus	36	Colorimetric method for the determina-	
hygroscopic coefficient	8	tion of humus	240-247
iron and alumina	34-35	<i>Colpidium colpoda</i> isolated from the soil.	141
lime and magnesia	32-33, 43	<i>Colpoda cucullis</i> isolated from the soil..	141
literature cited	48	Composting, as a means of providing a	
magnesia and lime	32-33, 43	congenial environment for sulfofying	
manganese	34	bacteria	533-539
moisture equivalent	9	Concentration of colloidal solution, ef-	
nature and method of the investi-		fect on time required for coagulation	595-596
gation	7	Conn's sodium asparaginate agar	154-158
nitrification studies	15-22	Contra-enzyme activities of microorgan-	
nitrogen, total, in the soil.....	37-38, 41	isms	185, 188, 191
nitrogen-fixation studies	22-28	Cook, R. C.—	
phosphoric acid	35, 41-42	(paper)—	
potash	32, 42	Effect of Grinding on the Lime Re-	
reaction of the soils	38	quirement of Soils	95-98
silica, insoluble and soluble.....	30-32	Quantitative Media for the Estima-	
soils, description of	7-8	tion of Bacteria in Soils.....	153-161
sulfuric acid	35, 42	Waksman, S. A., and (paper), Incuba-	
summary	47-48	tion Studies with Soil Fungi. See	
water-extract studies	38-39	Incubation studies with soil fungi.	275-284
wilting point	10	Corn, The Influence of Lime on the	
Coefficient, hygroscopic	8-9	Yield and Nitrogen Content of (pa-	
Coleman, D. A., Lint, H. C., and Kope-		per), A. W. Blair and H. C. McLean.	
loff, N. (paper), Can Soil be Sterilized		See Lime, the influence on the yield.	489-504
without Radical Alteration? See Ster-		Cottonseed meal, as used in nitrifica-	
ilization, can soil be	259-274	tion	17, 19, 20

PAGE	PAGE
Cotyledons, color of, as a criterion of toxic action of salts on soybeans..... 169	Extra-cellular activity of enzymes secreted by bacteria 182-183
Cowpea soil, used for inoculation of soybeans 579-583	Factors Influencing the Protein Content of Soybeans (paper), J. G. Lipman and A. W. Blair. See Soybeans, factors influencing 171-178
Crop yields, in the study of the nitrogen-carbon ratio 70-73	Farmogerm, used for inoculation of soybeans 579-583
Curtis, R. E.—Waksman, S. A., and (paper), The Actinomyces of the Soil. See Actinomyces of the soil 99-134	Ferguson's Composite, used for inoculation of soybeans 579-583
Czapek's solution agar 104	Flagellates, activity and numbers in the soil 136-140
Detrimental effect of protozoa upon bacteria 145, 147, 151	Flora, Soil, Preliminary Experiments on Some Effects of Leaching on the (paper), C. B. Lipman and L. W. Fowler. See Leaching, preliminary experiments 291-297
Diastase Activity and Invertase Activity of Bacteria (paper), G. P. Koch.. 179-196	Fowler, L. W.—Lipman, C. B., and (paper), Preliminary Experiments on Some Effects of Leaching on the Soil Flora. See Leaching, preliminary experiments 291-297
diastase activity, method for determination of 181	Fred, E. B., and Graul, E. J. (paper), Some Factors that Influence Nitrate Formation in Acid Soils. See Nitrate formation in acid soils 317-338
enzyme activities of bacteria and the possible relation to their ability to decompose proteins 185-188	Fungi—
enzymes, secretion of, by bacteria in culture solutions 181-183	Soil, Incubation Studies with (paper), S. A. Waksman and R. C. Cook. See Incubation studies with soil fungi. 275-284
extra-cellular enzyme activity in a five-day incubation period 182-183	The Effect of Soil Reaction on Ammonification by Certain Soil Fungi (paper), N. Kopeloff. See Reaction, the effect on soil 541-573
historical review 179-180	The Inoculation and Incubation of Soil Fungi (paper), N. Kopeloff. See Inoculation and incubation... 381-403
invertase activity, method for determination of 181-182	
literature cited 194-196	Gelatin, used for the study of ammonification and nitrification 329-333
protein—	<i>Glaucoma</i> , isolated from the soil 141
and carbohydrate decomposition by bacteria in its possible relation to enzyme activity 188-193	Graul, E. J.—Fred, E. B., and (paper), Some Factors that Influence Nitrate Formation in acid Soils. See Nitrate formation in acid soils 317-338
decomposition by bacteria and its possible relation to enzyme activity 183-185	Gravimetric method for the determination of humus 242-247
summary 193-194	Grinding Effect of, on the Lime Requirement of Soils (paper), R. C. Cook 95-98
Dilution method, used for the counting of protozoa 139-140	Guelph, soybean, yield of dry matter and nitrogen content 175-178
Dry matter, yield, in limed and unlimed plots 494-499	Gypsum, effect upon—
Dry weight of soybeans as a criterion of toxic action of salts 165-170	ammonification 351-353
	crop yields 353-355
Ebony, soybean, yield of dry matter and nitrogen content 175-178	sulfification 344-351, 357-358
Edna, soybean, yield of dry matter and nitrogen content 175-178	
Effect of Grinding on the Lime Requirement of Soils (paper), R. C. Cook... 95-98	<i>Halteria</i> , isolated from the soil 141
Egg-albumen agar, used for the counting of bacteria 104, 154, 155, 156, 157, 158, 159, 366	Hay infusion agar 154-159
Electrolyte, minimum requirement for the flocculation of a given amount of soil colloidal solution 590-593	Heat used in intermittent sterilization of soils 261-264
Electrolytes, efficiency of, in flocculating soil colloidal solutions 588-590	Hilgard, Eugene Woldemar (biographical sketch) 1
<i>Enchelys pupa</i> , isolated from the soil... 141	Hilgard's contribution to the effect of climate upon soil types 4
Enzyme activities of bacteria and the possible relation to their ability to decompose proteins 185-188	
Enzymes secreted by bacteria—	
extra-cellular activity of 182-183	
in culture solutions 181-183	
Ether, ethyl, used in soil sterilization. 267-273	
<i>Euglena viridis</i> , isolated from the soil.. 141	
<i>Euplotes</i> , isolated from the soil 141	

	PAGE		PAGE
Histidine nitrogen in soils and dried blood	512, 515, 520-521, 523	Influence of—	
Hollybrook, soybean, yield of dry matter and nitrogen content	175-178	Some Common Humus-Forming Materials of Narrow and of Wide Nitrogen-Carbon Ratio on Bacterial Activities, The (paper), P. E. Brown and F. E. Allison. See Nitrogen-Carbon ratio	49-75
Humic materials, effect on the stability of clay colloidal solutions	593	Various Salts on the Growth of Soybeans, The (paper), J. W. Shive. See Soybeans, the influence of the various salts	163-170
Humus—		Inoculation—	
and humus nitrogen—		and Incubation of Soil Fungi, The (paper), N. Kopeloff	381-403
ammonium hydroxide and sodium hydroxide extractions compared	287-288	incubation studies	394-402
in loess soils of Nebraska	240-252	literature cited	402-403
ash, in loess soils of Nebraska	244-247	methods of the study of inoculation	382-383
definition of and methods of determination	240-242	<i>Penicillium</i> sp., study of inoculation	383-384
-Forming, The Influence of Some Common Humus-Forming Materials of Narrow and of Wide Nitrogen-Carbon Ratio on Bacterial Activities (paper), P. E. Brown and F. E. Allison. See Nitrogen-carbon ratio	49-75	<i>Rhizopus nigricans</i> , study of inoculation and incubation	385-387, 398-402
in the study of the effects of climate on soils	36	<i>Rhizopus oryzae</i> , study of inoculation	389-390
Nitrogen Problem in Arid Soils, A Preliminary Statement as to the Status of the (paper), C. B. Lipman	285-290	spores, numbers of in inoculum, affecting ammonification	391-392
ratio of, to nitrogen	247-251	summary	402
Hydrochloric acid, normal solution of, as affecting ammonification by soil fungi	543-556	<i>Zygorrhynchus Vuilleminii</i> , study of inoculation and incubation,	387-388, 394-398
Hydrogen peroxide used in soil sterilization	267, 273	The Yield and Nitrogen Content of Soybeans as affected by (paper), J. G. Lipman and A. W. Blair	579-584
Hydrolysis of proteins	515-517	Intermittent sterilization of soil by dry heat	259-264
Hydrolytic processes, the variation of	184	Introductory (editorial)	3-4
Hygroscopic coefficient	8-9, 214	Invertase activity—	
Hygroscopicity—		of Bacteria, Diastase Activity and (paper), G. P. Koch. See Diastase activity and	179-196
in loess soils of Nebraska	214-219	method for determination of	181-182
its relation to mechanical composition of loess soils	410-411	Iron—	
Incubation—		and alumina, in the study of the effects of climate on soils	34-35
the Inoculation and, of Soil Fungi (paper), N. Kopeloff. See Inoculation and incubation	381-403	in loess soils	418-419
period—		Isham, R. M.—Alway, F. J., and (paper), The Loess Soils of the Nebraska Portion of the Transition Region: III. Potash, Soda and Phosphoric Acid. See Loess soils of the Nebraska portion of the transition region: III	299-316
as affecting the accumulation of ammonia by cultures of bacteria and protozoa	146-149	Ito San, soybean, yield of dry matter and nitrogen content	175-178
as affecting the activity of enzymes secreted by bacteria	184-185	Johnson, H. W.—Brown, P. E., and (paper), Studies on Sulfocification. See Sulfocification, studies on	339-362
comparison of three and five days, for the development of bacterial colonies	156	Key—	
for tests of sulfocification	356-357	for the identifying of bacteria which dissolve cellulose	473-476
for the study of ammonification by soil fungi	276-278	to the identification of the Actinomycetes	129-130
Studies with Soil Fungi (paper), S. A. Waksman and R. C. Cook	275-284	Koch, G. P. (paper), Diastase Activity and Invertase Activity of Bacteria. See Diastase activity and	179-196
biological stage of fungi, as affecting ammonification	279-283		
incubation period and moisture relationship	276-278		
introduction	275		
moisture relationship	276-278		
summary	283-284		

PAGE	PAGE
Kopeloff, N.— (paper)— The Effect of Soil Reaction on Am- monification by Certain Soil Fun- gi. See Reaction, the effect of soil 541-573 The Inoculation and Incubation of Soil Fungi. See Inoculation and incubation 381-403	and Fowler, L. W. (paper), Prelimi- nary Experiments on Some Effects of Leaching on the Soil Flora. See Leaching, preliminary experiments 291-297 and Waynick, D. D. (paper), A De- tailed Study of Effects of Climate on Important Properties of Soils. See Climate, a detailed study of... 5-48
Coleman, D. A., Lint, H. C., and (pa- per), Can Soil be Sterilized without Radical Alteration? See Steriliza- tion, can soil be 259-274	Lipman, J. G.— and Blair, A. W. (paper)— Factors Influencing the Protein Con- tent of Soybeans. See Soybeans, factors influencing 171-178 The Yield and Nitrogen Content of Soybeans as Affected by Inocu- lation 579-584
Lathrop, E. C. (paper), Protein Decom- position in Soils. See Protein decom- position in soils 509-532	McLean, H. C., and Lint, H. C. (pa- per), The Oxidation of Sulfur in Soils as a Means of Increasing the Availability of Mineral Phosphates 533-539
Leaching, Preliminary Experiments on Some Effects of, on the Soil Flora (paper), C. B. Lipman and L. W. Fowler 291-297 alkalies added 291 ammonification 292-293 concluding remarks 296-297 literature cited 297 nitrication 293-295 nitrogen-fixation, non-symbiotic 295-296	Loess Soils of the Nebraska Portion of the Transition Region, The— I. Hygroscopicity, Nitrogen and Or- ganic Carbon (paper), F. J. Al- way and G. R. McDole 197-238 arid soils, compared with the loess soils 234 carbon, organic 226-228 carbon-nitrogen ratio 229-231 Chernozem soils, compared with the loess soils 231-234 climate 206-214 hygroscopicity 214-219 introduction 197-202 literature cited 236-238 methods of sampling 202-206 nitrogen 219-226 summary 234-236 volatile matter 229, 232 water of constitution 229, 232
Lime— and magnesia, in the study of the ef- fects of climate on soils 32-33, 43 in loess soils 413 requirement of soils— effect of grinding on (paper), R. C. Cook 95-98 from limed and unlimed plots..... 495 used for nitrate accumulation.... 335-336 The Influence of, on the Yield and Nitrogen Content of Corn (pa- per), A. W. Blair and H. C. Mc- Lean 489-504 crop of 1908 493 crop of 1913 494 dry matter, yield of 494-499 literature cited 504 nitrogen— percentage in dry matter and re- covered 496-497, 499-503 total, recovered 496-497, 500-501 summary 503	II. Humus, Humus-Nitrogen and Col- or (paper), F. J. Alway and M. J. Blish 239-258 arid soils compared with loess soils. 256 carbon (organic)-humus ratio 249-252 Chernozem soils compared with loess soils 255 color of the soils 253-255 colorimetric method for the deter- mination of humus 240-247 gravimetric method for the deter- mination of humus 242-247 humus— ratio to nitrogen 247-251 studies on 240-252 introduction 239 literature cited 257-258 nitrogen, percentage of in humus. 251-252 summary 256-257
Lint, H. C.— Coleman, D. A., Kopeloff, N., and (pa- per), Can Soil be Sterilized without Radical Alteration? See Steriliza- tion, can soil be 259-274 Lipman, J. G., McLean, H. C., and (paper), The Oxidation of Sulfur in Soils as a Means of Increasing the Availability of Mineral Phos- phates 533-539	III. Potash, Soda and Phosphoric Acid (paper), F. J. Alway and R. M. Isham 299-316 arid soils, compared with loess soils 313-314 Chernozem, compared with loess soils 313-314
Lipman and Brown's modified synthetic agar 154, 156, 157	
Lipman, C. B.— (paper), A Preliminary Statement on the Present Status of the Humus- Nitrogen Problem in Arid Soils.. 285-290	

	PAGE		PAGE
citric acid soluble portions	306-313	Manhattan, soybean, yield of dry matter and nitrogen content	175-178
hydrochloric acid soluble portions.	303-304	Mass Action Law, applied to the flocculation of soil colloidal solutions by electrolytes	595-598
introduction	299	Mechanical analysis of loess soils.....	406-410
literature cited	316	Media for the Estimation of Bacteria in soils, Quantitative (paper), R. C. Cook	153-161
separates of soil, composition of..	304-305	bacterial numbers in air-dry soil on the different media	157-158
summary	314-316	comparison of three and five-day incubation periods	156
total amounts present	300-302	composition of media	154
IV. Mechanical Composition and Inorganic Constituents (paper), F. J. Alway and C. O. Rost.....	405-436	literature cited	159
acid-insoluble matter	422-423	separate determination of bacterial numbers	160-161
alumina	416-418	summary	159
alide soils, compared with loess soils.	433	Medium Yellow, soybean, yield of dry matter and nitrogen content.....	175-178
baryta	420-421	Melanin nitrogen in soils and dried blood	512, 515, 520
carbon dioxide	414-415	Methods—	
chemical analysis of loess soils....	412-431	for the study of inoculation with soil fungi	382-383
Chernozem, compared with loess soils	423, 432	of taking soil samples for the counting of bacteria	367
hygroscopicity, its relation to mechanical composition	410-411	Microorganisms—	
introduction	405	action on—	
iron	418-419	acid amides	524-526
lime	413	amino acids	518
litmus reaction	422	decomposition of proteins by	517
magnesia	415-416	Modified synthetic agar, Lipman and Brown	154, 156, 157
manganese	420-421	Moisture—	
mechanical analysis	406-410	as influencing the activity of protozoa and bacteria	143-150
literature cited	435-436	content of the soil, as affecting the activity of protozoa	136-137
silica	419	equivalent, in the study of the effects of climate on soils	9
sulfur	419-420	relationship of soil fungi	276-278
summary	434-435	Monas—	
titanium	421-422	<i>guttula</i> , isolated from the soil	141
water-soluble material	421	<i>vivipara</i> , isolated from the soil	141
Lysine nitrogen in soils and dried blood.	512, 515, 520-523	<i>Monilia sitophila</i> , ammonification studies,	280-284
McBeth, I. G. (paper), Studies in the Decomposition of Cellulose in Soils. See Cellulose in soils, studies on....	437-487	Muck colloidal solution, effect on the stability of clay colloidal solution.....	593
McDole, G. R.—Alway, F. J., and (paper), The Loess Soils of the Nebraska Portion of the Transition Region: I. Hygroscopicity, Nitrogen and Organic Carbon. See Loess soils of the Nebraska portion of the transition region: I	197-238	<i>Mucor plumbeus</i> , ammonification studies,	275-284
McLean, H. C.—		<i>Nassula elgeans</i> , isolated from the soil..	141
Blair, A. W., and (paper), The Influence of Lime on the Yield and Nitrogen Content of Corn. See Lime, the influence on the yield	498-504	Nebraska, The Loess Soils of the Portion of the Transition Region—	
Lint, H. C.—Lipman, J. G., and (paper), The Oxidation of Sulfur in Soils as a Means of Increasing the Availability of Mineral Phosphates	533-539	I. Hygroscopicity, Nitrogen and Organic Carbon (paper), F. J. Alway and G. R. McDole. See Loess soils of the Nebraska portion of the transition region: I	197-238
Magnesia—		II. Humus, Humus-Nitrogen and Color (paper), F. J. Alway and M. J. Blish. See Loess soils of the Nebraska portion of the transition region: II	239-258
in loess soils	415-416		
lime and, in the study of the effects of climate on soils	32-33, 43		
Magnesium carbonate, effect on sulfonation	359-361		
Manchu, soybean, yield of dry matter and nitrogen content	175-178		
Manganese—			
in loess soils	420-421		
in the study of the effects of climate on soils	34		

PAGE	PAGE
III. Potash, Soda and Phosphoric Acid (paper), F. J. Alway and R. M. Isham. See Loess soils of the Nebraska portion of the transition region: III	299-316
IV. Mechanical Composition and Inorganic Constituents (paper), F. J. Alway and C. O. Rost. See Loess soils of the Nebraska portion of the transition region: IV	405-436
Nitragin, used for inoculation of soybeans	579-583
Nitrate—	
accumulation, effect on reaction.....	335-336
Formation in Acid Soils, Some Factors that Influence the (paper), E. B. Fred and E. J. Gaul.....	317-338
ammonification in non-acid and acid soils	324-328
bacteria, nitrifying, occurrence in non-acid and acid soils	318-324
calcium carbonate, effect upon ammonification, effect upon—	
ammonification and nitrification,	322-324, 328-333
numbers of bacteria and nitrate reduction	332-333
literature cited	337-338
nitrates, accumulation of in various soils	333-336
nitrification in non-acid and acid soils	324-328
reaction, affected by nitrate accumulation	335-336
soils used	317-318
summary	336-337
nitrogen, determination of in the soil	84
reduction and numbers of bacteria affected by calcium carbonate.....	332-333
Nitrates, accumulation of in various soils	333-336
Nitrification—	
and ammonification in non-acid and acid soils	324-328
as affected by calcium carbonate.....	328-333
experiments, in the study of the nitrogen-carbon ratio	62-65
studies, in the study of the effect of climate on soils	15-22
Nitrifying bacteria, occurrence in acid and non-acid soils	318-324
Nitrogen—	
Carbon Ratio, the Influence of Some Common Humus-Forming Materials of Narrow and of Wide, on Bacterial Activities (paper), P. E. Brown and F. E. Allison	49-75
azofication experiments	65-70
blood, dried, ammonification of.....	57-62
casein, ammonification of	54-57
crop yields	70-73
effect of the materials added.....	52-54
literature cited	75
nitrification experiments	62-65
plan of the experiment	51-52
summary	73-75
content of soils, determination of....	92
fixation studies, in the study of the effects of climate on soils	22-28
forms of in dried blood and soil.....	512
hydrolyzable, in soils	521
in loess soils of Nebraska	219-226
in the soil as ammonia and nitrate....	91-92
methods of determination of different forms in the soil	514-515
non-amino, in dried blood and soils,	512, 515, 520
percentage of, in humus in loess soils of Nebraska	251-252
recovered in corn, as affected by liming	496-497, 500-503
total, in the soil	37-38, 41, 83
Nitrogerm, Mulford and Standard, used for inoculation of soybeans	579-583
Nodule formation on soybeans, depression of	172-174
Numbers—	
Bacterial, in Soils, at Different Depths and in Different Seasons of the Year (paper), S. A. Waksman. See Bacterial numbers in soils	363-380
of Actinomyces in the soil, as related to bacterial numbers	105-107
of bacteria, as affected by the presence of protozoa	141-150
of protozoa in the soil	140
Ohio—	
9035, soybean, yield of dry matter and nitrogen content	175-178
Soils, Accumulation of Salts in (paper), J. W. Ames and C. J. Scholtenberger	575-578
Organic—	
carbon in loess soils of Nebraska....	226-228
matter influencing activity of protozoa	138-139
Osmic acid, used in soil sterilization..	269-273
Oxidation of sulfur in soils	533-539
Oxytricha, isolated from the soil	141
Paramoecium, isolated from the soil....	141
Penicillium sp.—	
ammonification of, in the study of inoculation	383-384
studies on incubation and moisture requirements	275-284
the effect of reaction on....	552-554, 557-560
Peptone agar of Temple	154-157
Phosphate—	
acid, effect upon—	
ammonification	351-353
crop yields	353-355
sulfification	344-351
mono-calcium, effect upon—	
ammonification	351-353
crop yields	353-355
sulfification	344-351
rock, effect upon—	
ammonification	351-353
crop yields	353-355
sulfification	344-351

	PAGE		PAGE
Phosphates, accumulation of available, in the soil as affected by sulfonation..	535-539	ammonification affected by presence of protozoa	141-150
Phosphoric acid—		bacterial numbers, affected by protozoa	141-150
in the study of the effects of climate on soils	35, 41-42	literature cited	151-152
potash and soda in loess soils of Nebraska	299-316	numbers of protozoa in the soil	130-140
<i>Phyllomitus undulans</i> , isolated from the soil	141	summary	150-151
Physiology of the Actinomyces	130-132	types of protozoa in the soil	140-141
Plant cellulose, method of preparation. 439-440		<i>Pseudomonas</i> —	
<i>Pleuromena</i> , isolated from the soil	141	<i>arguta</i>	465-467
Potash—		<i>minuscula</i>	467-468
in the study of the effects of climate on soils	32, 42	<i>mira</i>	468-470
soda and phosphoric acid in loess soils of Nebraska	299-316	Quantitative Media for the Estimation of Bacteria in Soils (paper), R. C. Cook. See Media (quantitative)...	153-161
Potter, R. S., and Snyder, R. S. (paper), Carbon and Nitrogen Changes in the Soil Variously Treated: Soil Treated with Lime, Ammonium Sulfate and Sodium Nitrate. See Carbon and nitrogen changes	76-94	Reaction—	
<i>Prorodon ovum</i> , isolated from the soil..	141	of the soils, in the study of the effects of climate on soils	38
Protein—		The Effect of Soil, on Ammonification by Certain Soil Fungi (paper), N. Kopeloff	541-573
and carbohydrate decomposition by bacteria in its possible relation to enzyme activity	188-193	calcium carbonate, used for change of reaction	556-573
Content of Soybeans, Factors Influencing the (paper), J. G. Lipman and A. W. Blair. See Soybeans, factors influencing	171-178	hydrochloric acid, used for change of reaction	543-556
Decomposition in Soils (paper), E. C. Lathrop	509-532	introduction	541-542
amide nitrogen in soils, 512, 515, 520-521, 524-526		literature cited	571-573
amino (mono) acid nitrogen, 512, 515, 520-522		methods	542-543
ammonia production	517-519	<i>Penicillium</i> sp., the effect of reaction on	552-554, 557-560
analytical results	514-515	reaction altered by additions of—	
arginine nitrogen in soils, 512, 515, 520-521, 523		CaCO ₃ and H ₂ SO ₄	556-573
dried blood	511-512	normal solutions of HCl and NaOH	543-556
histidine nitrogen... 512, 515, 520-521, 523		<i>Rhizopus nigricans</i> , the effect of reaction on	545-550, 565-570
hydrolysis of—		sodium hydroxid, used for change of reaction	543-556
proteins	515-517	sulfuric acid, used for change of reaction	556-573
the soil and dried blood	512-513	summary	556, 571
hydrolyzable nitrogen	521	<i>Zygorrhynchus Vuilleminii</i> , the effects of reaction on ...	550-552, 560-565
introduction	509, 510	to litmus, of loess soils	422
literature cited	529-532	<i>Rhizopus</i> —	
lysine nitrogen	512, 515, 520-523	<i>nigricans</i> —	
melanin in soils	512, 515, 520, 526	ammonification of, in the study of inoculation and incubation, 385-387, 398-402	
nitrogen—		the effect of reaction on.. 545-550, 565-570	
forms of, in dried blood and in soil	512	<i>oryzae</i> , ammonification of, in the study of inoculation	389-390
non-amino, in soils .. 512, 515, 520, 526		Rost, C. O.—Alway, F. J., and (paper), The Loess Soils of the Nebraska Portion of the Transition Region: IV. Mechanical Composition and Inorganic Constituents. See Loess soils of the Nebraska portion of the transition region: IV	405-436
proteins in the soil at the end of the experiment	527-528	Salient features of Actinomyces, tabular statement of	127-128
soils used	512		
summary	528-529		
Van Slyke's analysis applied to soils, 514-515, 519-520			
molecule, structure of	516		
Protozoa, Studies on Soil (paper), S. A. Waksman	135-152		
activity of protozoa in the soil	135-139		

	PAGE	PAGE
Salts—		
Accumulation of, in Ohio Soils (paper), J. W. Ames and C. J. Schollenberger	575-578	
The Influence of Various, on the Growth of Soybeans (paper), J. W. Shive. See Soybeans, the influence of various salts	163-170	
Schollenberger, C. J.—Ames, J. W., and (paper), Accumulation of Salts in Ohio Soils	575-578	
Schulze's valency law, applied to soil colloidal solutions	592-593	
Shive, J. W. (paper), The Influences of Various Salts on the Growth of Soybeans, J. W. (paper), The Influence of various salts	163-170	
Silica—		
in loess soils	419	
insoluble and soluble, in the study of the effects of climate on soils.....	30-32	
Snyder, R. S.—Potter, R. S., and (paper), Carbon and Nitrogen Changes in the Soil Variously Treated: Soil Treated with Lime, Ammonium Sulfate and Sodium Nitrate. See Carbon and nitrogen changes	76-94	
Soda, potash and phosphoric acid in loess soils of Nebraska	299-316	
Sodium—		
asparaginate agar of Conn	154-159	
hydroxide, normal solutions of, as affecting ammonification by soil fungi,	543-556	
Soil Protozoa, Studies on (paper), S. A. Waksman. See Protozoa, studies on. 135-152		
Soil's own nitrogen, as used in nitrification	17, 18, 20	
Solid material, effect of on the stability of colloidal solutions	593-595	
Soybeans—		
a comparison of varieties	174-178	
Factors Influencing the Protein Content of (paper), J. G. Lipman and A. W. Blair	171-178	
nodule formation, depression of..	172-174	
rate of seeding	171-172	
varieties used	174-178	
variety tests in field experiments. 176-178		
yield of dry matter and nitrogen content	175-178	
The Influence of Various Salts on the Growth of (paper), J. W. Shive. 163-170		
cotyledons, color of, as a criterion of the toxic action of the salts... 169		
method of harvesting	165	
salts employed	163-164	
seeds used	164	
soybean tops, dry weight of.....	165	
toxic action of the salts, dry weight of plants as a criterion	166-170	
The Yield and Nitrogen Content of, as Affected by Inoculation (paper), J. G. Lipman and A. W. Blair....	579-584	
Spores of fungi, numbers of, affecting ammonification	391-393	
Sporogen, used for inoculation of soybeans	579-583	
Sterilization—		
Can Soil be Sterilized without Radical Alteration? (paper), D. A. Coleman, H. C. Lint and N. Koppeloff	259-274	
antiseptics, relative sterilizing efficiency	264-267	
intermittent sterilization of soil by dry heat	259-264	
literature cited	274	
summary	273	
vacuum chamber	265	
volatile antiseptics—		
applied as vapor in partial vacuum	267-270	
applied under heat and pressure. 271-273		
intermittent partial, as affecting the microörganic population of the soil	259-264	
of soil, influencing the activity of protozoa	138-139	
<i>Strombidium</i> , isolated from the soil....	141	
Studies on Soil Protozoa (paper), S. A. Waksman. See Protozoa, studies on. 135-152		
Sulfates, amounts present in the soil....	343	
Sulfification—		
affecting the accumulation of available phosphoric acid	535-539	
Studies in (paper), P. E. Brown and H. W. Johnson	339-362	
ammonification tests	351-353	
calcium carbonate, effect on sulfication	358-361	
conclusions	355, 362	
crop yields	353-355	
gypsum, effect on sulfification....	357-358	
incubation period for tests of sulfification	356-357	
literature cited	362	
magnesium carbonate, effect on sulfication	359-361	
method for determining sulfofying power of soils	339	
plan of the experiment	340-342	
sulfates present at sampling	342-344	
sulfification tests	344-351	
Sulfofying power of soils, method for determining	339	
Sulfur—		
in loess soils	419-420	
The Oxidation of, in Soils as a Means of Increasing the Availability of Mineral Phosphates (paper), J. G. Lipman, H. C. McLean and H. C. Lint	533-539	
Sulfuric acid—		
as affecting ammonification by soil fungi	556-573	
in the study of the effects of climate on soils	35, 42	
Swan, soybean, yield of dry matter and nitrogen content	175-178	

	PAGE		PAGE
Tabular statement of salient features of		Studies on Soil Protozoa. See Protozoa, studies on	135-152
Actinomyces	127-128	and Cook, R. C. (paper), Incubation Studies with Soil Fungi. See Incubation studies with soil fungi	275-284
Tarheel, soybean, yield of dry matter and nitrogen content	175-178	and Curtis, R. E. (paper), The Actinomyces of the Soil. See Actinomyces of the soil	99-134
Temple's peptone agar	154-157		
Titanium in loess soils	421-422	Water—	
Toluene, used in soil sterilization	267-273	extract studies, in the study of the effects of climate on soils	38-39
Toxic action of salts on soybeans—		of constitution in loess soils of Nebraska	229, 232
color of cotyledons, as a criterion of	169	-soluble material in loess soils of Nebraska	421
dry weight of plants, as a criterion of	166-170		
Urea—		Waynick, D. D.—Lipman, C. B., and (paper), A Detailed Study of Effects of Climate on Important Properties of Soils. See Climate, a detailed study of	5-48
agar of Brown	154, 156, 157	Wilson, soybean, yield of dry matter and nitrogen content	175-178
ammonium nitrate agar	154, 158, 159	Wilting point, in the study of the effects of climate on soils	10
<i>Uroleptus</i> , isolated from the soil	141	Wolkoff, M. I. (paper), Studies on Soil Colloids: I. Flocculation of Soil Colloidal Solutions. See Colloids, studies on soil	585-601
<i>Uronema</i> , isolated from the soil	141		
Vacuum chamber for the sterilization of soil	265	<i>Zygorrhynchus Vuilleminii</i> —	
Van Slyke's method for the partition of nitrogen, applied to soils	514-515, 519-520	ammonification of, in the study of inoculation and incubation	387-388, 394-398
Varieties of soybeans, a comparison of	174-178	the effect of reaction on	550-552, 560-565
Veitch method for determination of soil acidity, as affected by grinding	96-98		
Volatile—			
antiseptics applied—			
as vapor in partial vacuum	267-270		
under heat and pressure	271-273		
matter in loess soils of Nebraska	229, 232		
<i>Vorticella</i> , isolated from the soil	141		
Waksman, S. A.—			
(paper)—			
Bacterial Numbers in Soils, at Different Depths and in Different Seasons of the Year. See Bacterial numbers in soils	363-380		

